

**Amendment and Response**

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Serial No.: 10/663,925

Confirmation No.: 2297

Filed: September 16, 2003

For: POLYMERS WITH SOFT SEGMENTS CONTAINING SILANE-CONTAINING GROUPS, MEDICAL DEVICES, AND METHODS

**Remarks**

The Office Action mailed December 8, 2005 has been received and reviewed. Claim 12 having been amended, the pending claims are claims 1-40. Reconsideration and withdrawal of the rejections are respectfully requested.

Applicants request reconsideration of the Restriction Requirement. The withdrawn claims are directed to medical devices that include segmented polymers that are the subject of the elected claims. For example, claim 18 is directed to a medical device that includes the segmented polymer of claim 1, and claim 37 is directed to a medical device that includes the segmented polymer of claim 35.

**The Claim Objection**

The Examiner objected to claim 12. Claim 12 having been amended pursuant to the Examiner's recommendation, this objection is rendered moot.

**The 35 U.S.C. §102 Rejection**

The Examiner rejected claims 1-17 and 35-36 under 35 U.S.C. §102(b) as being anticipated by Gunatillake327 (WO 99/50327) (US Equivalent 6,437,073). The Examiner also rejected claims 1-17 and 35-36 under 35 U.S.C. §102(b) as being anticipated by Gunatillake863 (WO 99/03863) (US Equivalent 6,420,452). These rejections are rendered moot.

Applicants' claims are directed to a segmented polymer that includes soft segments that are derived from the recited silane-containing compound (e.g., claim 1) or include the recited silane-containing group (e.g., claim 35).

Gunatillake327 is directed to a non-elastomeric polyurethane and Gunatillake863 is directed to an elastomeric polyurethane, wherein the chain extenders are derived from silicon-containing diols. There is no teaching or suggestion of a segmented polymer that includes soft segments that are derived from the recited silane-containing compound (e.g., claim 1) or include the recited silane-containing group (e.g., claim 35). Applicants explain at page 7, line 32

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through page 8, line 13 of their specification that the chain extenders of Gunatillake863 (which are analogous to the chain extenders of Gunatillake327) form hard segments. The Examiner appears to acknowledge this (at least in part) in the discussion of these two documents in the Office Action ("Note that the chain extenders containing arylene groups inherently impart hard segments to the polyurethane." Emphasis added.).

Applicants further explain the distinction between the incorporation of such materials into hard segments versus soft segments of segmented polymers at page 7, line 32 through page 8, line 13 of their specification as follows:

The present invention provides advantage in terms of the synthesis and properties of the resultant polymer relative to polymers derived from silane-containing chain extenders, which form hard segments, as described in International Publication No. WO 99/03863. In this latter method, the silane-containing chain extenders in the hard segment improve the compatibility between hard segments and soft segments, which improves the strength of the polymer. In the present invention, silane-containing compounds of Formula I are used in the soft segment to provide such compatibility. These polymers have improved strength using commercially available chain extenders compared to those described in WO 99/03863. Furthermore, it is believed that the properties of the polymers of the present invention are more easily controllable than that of the polymers of WO 99/03863 because the structures of the soft segments are more easily variable using the compounds of Formula I.

Thus, Applicants request withdrawal of these rejections.

The Examiner rejected claims 1-10, 13, 15-17, and 35-36 under 35 U.S.C. §102(b) as being anticipated by Zdrahala et al. (US 4,647,643). This rejection is respectfully traversed. Although the generic structure (Formula I) in Zdrahala et al. refer to the W groups as "divalent linking groups", the more specific structure (Formula II) show W as an oxygen atom, thereby forming a siloxane with Si-O-Si moieties. All the examples are also directed to siloxanes. In contrast, Applicants' claims recite silane-containing groups in the soft segments (e.g., claim 35) or soft segments derived from a silane-containing compound (e.g., claim 1).

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Although the R groups of Applicants' structures (Formulas I and II) can optionally include heteroatoms, the  $-\text{Si}(\text{R}^2)_2-$  moieties are defined as silane groups (see, e.g., page 6, line 33), meaning that the silicon would be bonded to carbon, not oxygen. Thus, there is no disclosure of segmented polymers as recited in Applicants' claims in Zdrahala, and withdrawal of this rejection is respectfully requested.

The Examiner rejected claims 35-36 under 35 U.S.C. §102(b) as being anticipated by Gunatillake971 (WO 00/64971, U.S. Equivalent 2002/0028901). This rejection is respectfully traversed. Although Gunatillake 971 generically describes polymers formed from diamine compounds in which  $\text{R}_7$  can be a hydrocarbon radical, all the examples are directed to siloxanes in which  $\text{R}_7$  is oxygen (e.g., an amine-terminated PDMS such as bis(3-hydroxypropyl)-polydimethyl siloxane). There is no enabling teaching, suggestion, or recognition of the advantages of silane-containing materials informing the soft segments of segmented polymers as recited in Applicants' claims. Thus, withdrawal of this rejection is respectfully requested.

The Examiner rejected claim 35 under 35 U.S.C. §102(b) as being anticipated by Iwahara (EP 661 332). This rejection is respectfully traversed. Iwahara does not disclose segmented polymers that include soft segments that include the silane-containing groups of claim 35. Thus, withdrawal of this rejection is respectfully requested.

**The 35 U.S.C. §103 Rejection**

The Examiner rejected claims 11-12 under 35 U.S.C. §103(a) as being unpatentable over Zdrahala (US 4,647,643). This rejection is respectfully traversed. As discussed above, Zdrahala only exemplifies siloxanes. Zdrahala provides no enabling teaching, suggestion, or recognition of the advantages of silane-containing materials as recited in Applicants' claims. Thus, withdrawal of this rejection is respectfully requested.

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**Summary**

It is respectfully submitted that the pending claims 1-40 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted

By

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March 8, 2006  
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**CERTIFICATE UNDER 37 CFR §1.8:**

The undersigned hereby certifies that the Transmittal Letter and the paper(s), as described hereinabove, are being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 8<sup>th</sup> day of March, 2006, at 5:50 pm (Central Time).

By:

Deb Schurmann  
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